

*A Finely Crafted O'Brien Unit 2 *PRACTICE* Test*

Calculator Section: You may use a calculator. Use a pencil. Show all work and circle your answer. When you finish, put away your calculator and you can come up to get the non-calculator part—you may continue to work on both sections without your calculator.

1. Evaluate each expression.

a. $|6.8|$

b. $|8 - 10|$

c. What is the definition of the absolute value of a number?

2. Give an example of a number that is:

a. real but not rational

b. rational but not an integer

c. an integer but not a whole number

d. a whole number but not a natural number

3. a. Write the reciprocal of 7.

b. Write the opposite of $\frac{2}{3}$.

c. Is $-x$ always less than x ? Justify your response.

4. An example of the commutative property of addition is $3 + 4 = 4 + 3$. Give an example of:

a. the commutative property of multiplication

b. the associative property of addition

c. the distributive property

5. Find the distance between $\frac{4}{5}$ and $-5\frac{3}{5}$ on a number line.

6. Evaluate and simplify

a. $6x + 7x + 5$

b. $(3x - 5) + (9 - 7x)$

c. $(x + 3y) - (6x - 2y)$

d. $-5x - (3x - 8)$

7. Simplify.

a. $3 \cdot 4m$

b. $5(3x + 4)$

c. $\frac{8x - 16}{4}$

d. $2(3j - 5k) - 4(j + 2k)$

8. If $a = -3$, $b = 8$, $c = -2$, and $d = -7$, evaluate.

a. $a - b$

b. $a + (-b) + c + (-d)$

9. Open up your laptop and follow the link from your laptop. Write the number correct here.

_____ correct out of 16

10. Open up your laptop and follow the link from your laptop. Write the number correct here.

_____ correct out of 8

11. Open up your laptop and follow the link from your laptop. Write the number correct here.

_____ correct out of 8

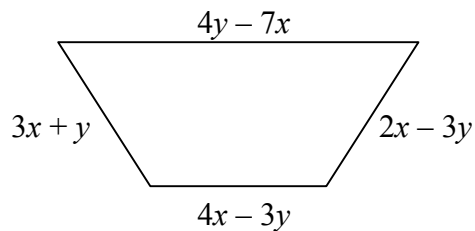
12. Evaluate each expression. Show as much work as necessary.

a. $\frac{12 \div 4 + 3 \cdot 2}{3^2}$

b. $[8 - 2(3^2 - 6)]$

13. Find 4 integers whose sum is greater than zero and whose product is less than zero.

14. Give an expression in simplified form for the perimeter of the trapezoid shown below.



15. Sometimes two algebraic expressions that look similar can have very different meanings. Take, for example, $5 - (2c + 8)$ and $-5(2c + 8)$.

a. Simplify $5 - (2c + 8)$.

b. Simplify $-5(2c + 8)$.

16. Miss Take needs to simplify $8 - 2(x - 3)$. Her working is shown at right.

a. Find the value of $8 - 2(x - 3)$ when $x = 5$.

$\begin{aligned}8 - 2(x - 3) \\&= 6(x - 3) \\&= 6x - 18\end{aligned}$

b. Find the value of $6x - 18$ when $x = 5$.

c. How do parts a. and b. show that Miss Take simplified $8 - 2(x - 3)$ **incorrectly**?

d. What is the correct simplification of $8 - 2(x - 3)$?

Bonus: Is it possible to select distinct integers x , y , and z so that $x \cdot y = y$ and $x + z = x$? Why or why not?